Remarks

Claims 21-26 are pending in the present Application. Claims 1-20 and 27-40 have been canceled.

In the present paper, Applicants have amended claims 21, 22, and 24-26.

Rejection under 35 U.S.C. 112, second paragraph

The Examiner has rejected claims 21, and 25-28 under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The Examiner has objected to the terms "arylketone" and "alkylketone" as being allegedly improper for defining moieties because moieties must have one valence. The Examiner asserts that "arylketone" or "alkylketone" are compounds which are absent of bonding/valence definition, and that terms such as alkylcarbonyl or arylcarbonyl should be considered.

Applicants respectfully disagree with the Examiner's position and traverse the rejection as it applies to claim 21. The meaning of the terms "arylketone" and "alkylketone" are clear in the present context as the applicants have defined them on page 10, lines 12-15. Therein, the Applicants have specified that "alkylketone" and "arylketone" represent a moiety containing an alkyl or an aryl group respectively linked to the main group or link via a ketone. It is clear to one of ordinary skill in the art based on this definition that the terms "alkylketone" and "arylketone" as used in the present application are identical respectively to "alkylcarbonyl" and "arylcarbonyl". Applicants do not believe any amendment is required. The meanings are clear.

Furthermore, the patent literature is replete with usage of these same terms as the applicant has used them herein. In this regard, The Examiner is respectfully directed to U.S. Patent Nos. 6,747,160 (claims 2, 11, and 12), 5,344,834 (claims 1, 8, 9, 28, and 30), and 5,283,358 (claim 16).

The Examiner is respectfully requested to withdraw the rejection to claim 21 under this ground.

The Examiner alleges, that for claims 25-28, it is self conflicting to claim a "pharmaceutical" composition without a dosage limitation, i.e., effective amount because a pharmaceutical composition by definition cannot be either ineffective or toxic.

Applicants respectfully disagree with the Examiner's position. Nevertheless, to advance prosecution of the subject application, applicants have amended claims 25 and 26, adding "an effective amount" language, and deleted claims 27-29. In view of these amendments, the rejection is deemed overcome.

Rejection under 35 U.S.C. 112, first paragraph

The Examiner has rejected claim 21 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. The Examiner asserts that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The examiner objects to the inclusion of "solvate" in claim 21, and asserts that the making of a solvate is not enabled.

Without any stipulation as to the merit of the Examiner's rejection, Applicants, to advance prosecution, have amended claim 21 to delete "solvate", thus overcoming the present rejection.

Obviousness-type Double Patenting Rejection

The Examiner has maintained her provisional rejection of claims 21-30 wherein R^1 is MR^4 wherein M is phenyl, R^4 is $-C_{1-6}Alkyl-NR^{21}SO_2R^{22}$, R^2 is non-heterocyclic, and R^3 is substituted or unsubstituted pyrimidine, under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the pending claims of copending Application No. 10/979,075, in view Tetrahedron, Vol. 42, No. 21, pp. 6039-6045, 1986, authors Rubini et al. (hereinafter "Rubini et al."). Applicants again respectfully disagree with the Examiner and traverse this rejection for the same reasons as set forth in the previous responses. Below is a summary of Applicants' position.

Applicants' reasons for traversing the Examiner's rejection are clear. In Applicants' view, the Examiner has failed to establish a *prima facie* case of obviousness. One of ordinary skill in the art, having knowledge of Rubini et al. and Patani et al. would not be motivated to arrive at the presently claimed compounds by replacing the –NHC(=O) group of the copending application Serial No. 10/979,075 (published as US2006/0025441) with a C_{1-6}Alkyl group.

The present compounds are not peptides or pseudopeptides as in Rubini et al., but are nonpetidic small molecules. It is clear from the disclosure in Rubini et al. that isosteric modification of amide bonds in peptides with amide bond surrogates such as an ethylene group are only feasible in cases where there are similar intermolecular interactions which make the non-peptide analogs interact similarly with a common receptor as the peptides. Such interactions would not be expected to be similar for nonpeptidic small molecules that have undergone isosteric modification. Were this not so, then any amide bond in any small molecule could be replaced with an ethylene group. This simply is not and cannot be true. Rubini et al. says nothing about isosteric modification of functionalities in nonpeptidic small molecules.

Applicants contend Rubini et al. only establishes that bioisosteric replacement of the amide functionality is only applicable in certain specialized situations in peptide chemistry due to considerations of steric and intermolecular interactions. Such considerations are highly unlikely to be applicable in the present case. Applicants do not find any support in Rubini et al., for the blanket proposition that an amide functionality in any small molecule can be replaced with an ethylene group or for the modification of a $–CH_2C(=O)NHCH_2$- moiety into a $–CH_2CH_2$- moiety, a proposition which the Examiner appears to be supporting.

Applicants have also carefully considered the Patani article on Bioisoterism (*Chem. Rev.* 1996, 96, 3147-3176) referred to by the Examiner, and find no support therein for the Examiner's assertion. The Patani article is no more relevant than Rubini et al., and at best can be considered cumulative. It simply points out that "peptide bonds and peptide fragments have been replaced with a wide variety of structural moieties in attempts to convert

peptides into chemically stable and orally available molecules". (Patani, page 3170).

It is respectfully submitted that neither of the Rubini et al. and Patani et al. references, alone or in combination provides any motivation for transforming the compounds of the copending application, which are not peptides, through isosteric modification of the amide group into an alkylene group to arrive at the presently claimed nonpeptidic compounds. Such a motivation is not only lacking through explicit language in Rubini but it is also lacking through express suggestion, or knowledge of those skilled in the art.

The Examiner is respectfully requested to withdraw the present rejection for the reasons set forth above.

CONCLUSION

Applicants respectfully request prompt reconsideration of present claims 21-26, and an early allowance of the application.

If the Examiner wishes to comment or discuss any aspect of this application or response, applicants' undersigned attorney invites the Examiner to call him at the telephone number provided below.

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